



AVR-2

VIDEO RECORDER/REPRODUCER

AMPEX



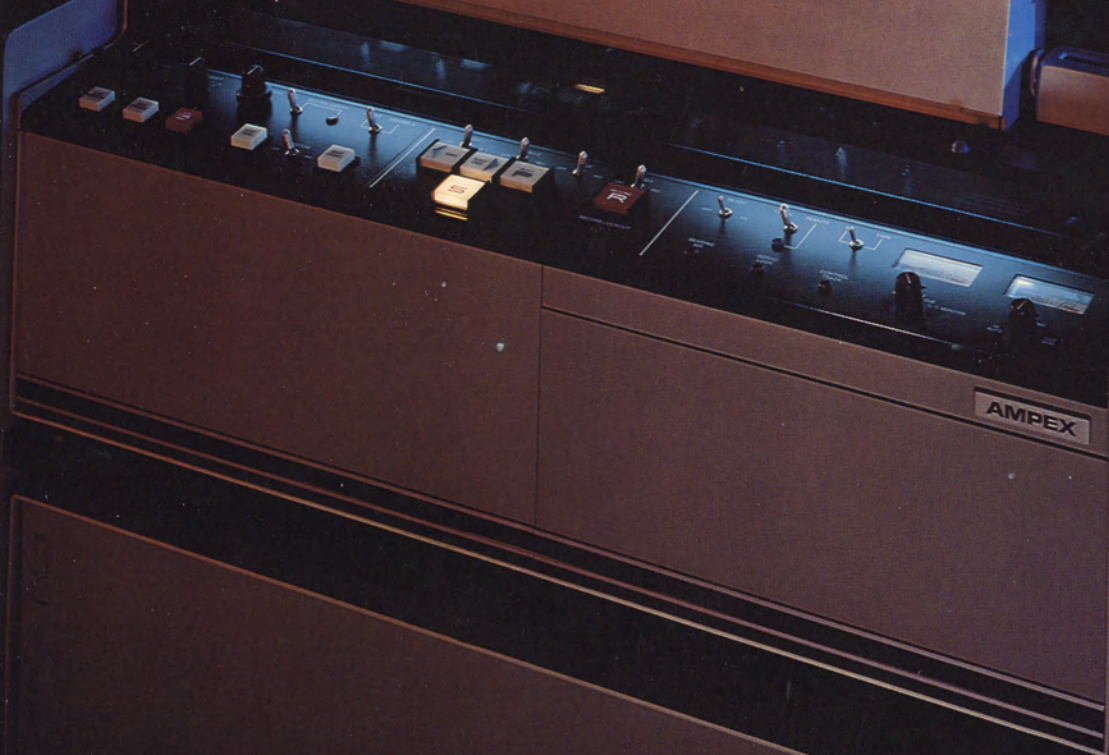
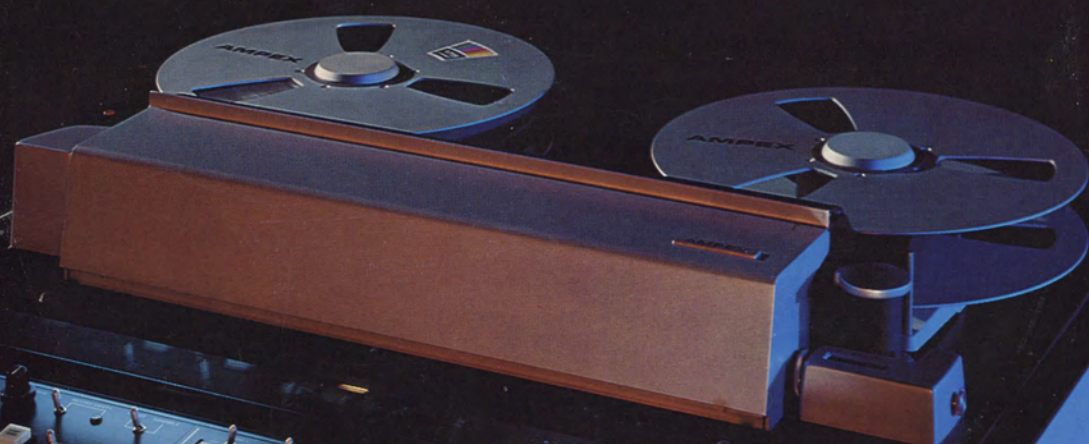
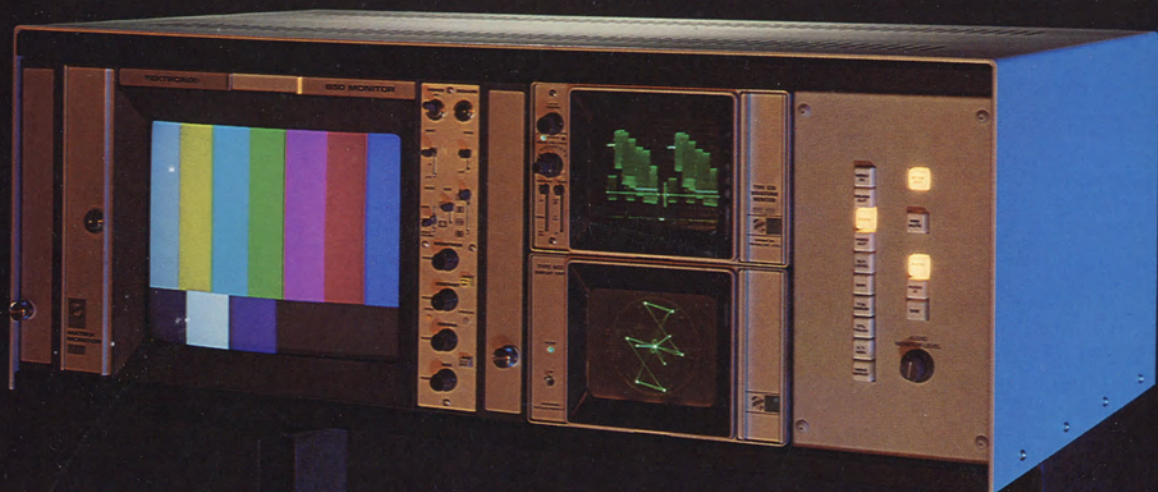
It started with the first video recorder of them all, the VR-1000. Then there was the first high-band color recorder; followed later by the incomparable AVR-1; then the ACR-25, the world's first random-access cassette recorder/reproducer. Each of these raised the art of television to new heights.



Now, Ampex introduces the AVR-2, the world's first modular quad

This new system offers greater versatility and a broader range of advantages than have hitherto been available in any single recorder. It is a modest investment that pays dividends in operating economy. It produces a broadcast signal that matches that of the world's finest quadruplex recorders. Because it is

modular, you can put it together so many ways, it can be everything you want it to be: studio console, lightweight portable, a modest combination of essential units, or complete with monitor bridge and a host of accessories.



Modularity: put it together any way you like

The lightweight modules of the AVR-2 enable you to assemble a configuration to fit any space, preference, or budget.

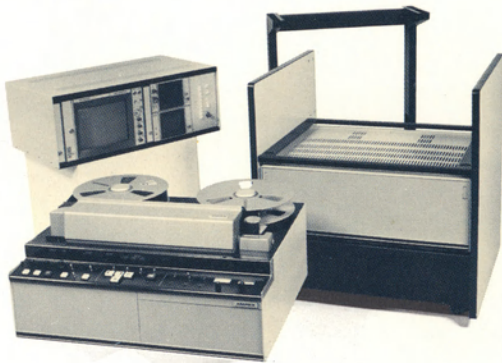
The transport weighs 150 lbs. The electronics module, 190 lbs. Each can be easily lifted by two people.

In remote locations the modules may be placed side by side,

with or without the optional monitor bridge, or with the transport on top of the electronics module — any way that fits in temporary quarters, in a station wagon or van, even in a boat or aircraft.

For studio use, the modules may be mounted in a lowboy console. An optional monitor bridge can be attached to the console.

In the studio console, the AVR-2 is narrow enough to roll through a standard 36" doorway with ease.



All of the units for a complete AVR-2 system . . .

can be easily lifted by two people . . .

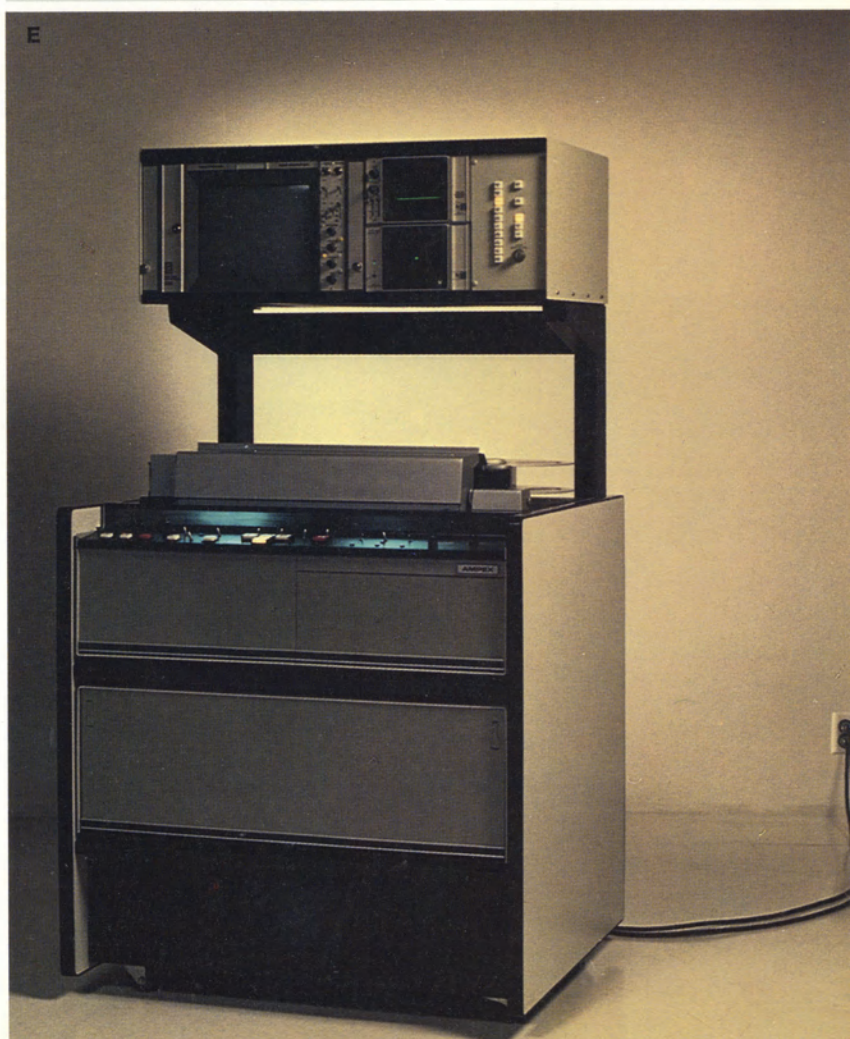
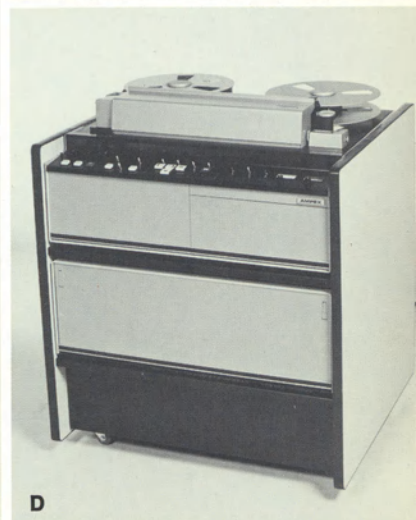
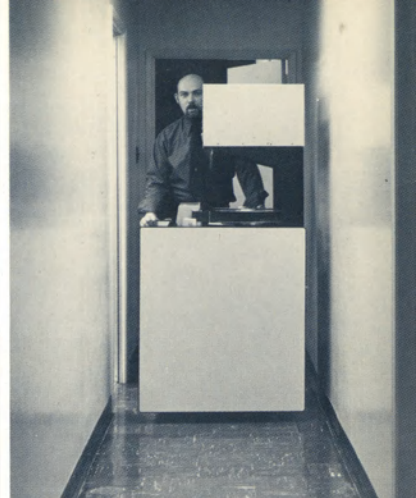
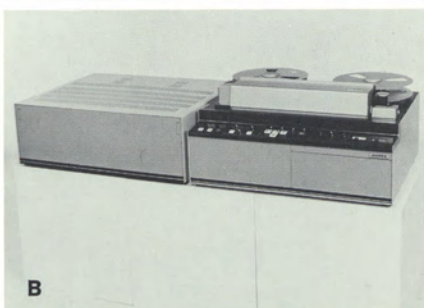
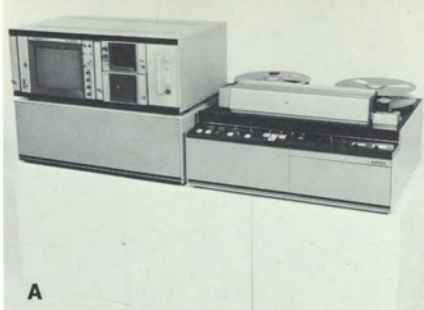


put into place . . .



and assembled in a matter of minutes.

Here are the ways in which you can assemble an AVR-2 anywhere you want to use it: (A) electronics module with monitor bridge on top, tape transport at the side; (B) electronics module and tape transport side by side; (C) electronics module with transport on top; (D) electronics module and transport in a lowboy console; (E) electronics module, transport and monitor bridge in a complete studio system.



Performance: equals the best, and adds something extra

Any Ampex video recorder with the designation "AVR" has a reputation to live up to. The AVR-2 does so with broadcast performance that will meet your most critical expectations.

The AVR-2 is a single-standard, high-band recorder that is delivered to meet your choice of line and power standards: NTSC, PAL, SECAM, PAL-M. (If required, standards can be changed easily and quickly by exchanging certain printed circuit modules.)

Picture and audio quality at 7½ or 15 ips meet the standards demanded of the finest quadruplex recorders. In the AVR-2 an **extended range, digital time base corrector** eliminates drift, offers a wider correction window, (1 horizontal line), and contributes to faster lockup time.

Lockup time — one second in NTSC, two seconds in PAL/SECAM. Credit the digital time base corrector, the direct-coupled printed circuit capstan drive, the new extremely fast-start Mark XV video head, and new fast-response digital servo systems.

An **integral sync generator** permits "stand-alone" operation. The generator will lock to any composite color signal, or reference to a black burst signal. One signal cable is all that is needed.



The audio capabilities of the AVR-2 also offer special advantages. An extra audio track, available as an option without sacrificing the cue track, puts **two, entirely separate audio tracks** at your disposal. You can use these, variously, to record background audio, to add voiceovers, to add bridging music or effects, or to record a second language. Record stereo audio if you like. Your only limitation is your imagination.

Economy: a lifetime benefit

The AVR-2 costs little to start with, and never stops saving you money. The machine has been called a "good neighbor" in the studio. It runs cool. The new Mark XV video head, the head cover, and the elimination of a head cooling blower make the AVR-2 the quietest video recorder ever. Air conditioning requirements are minimal.

And this good neighbor is also a good citizen. At a time when energy conservation is an important consideration in business planning, various configurations of the AVR-2 require as little as 8-10 amps, never more than 15.





Operation: single-standard simplicity

In the studio, in the field, anywhere — it doesn't matter where you take it — the AVR-2 is a pleasure to operate.

The number of controls is reduced to a minimum because of the machine's single operating standard, and these few are conveniently grouped in the most natural and logical locations. The illumination of **primary and maintenance controls** keeps operation simple even in dimly lit environments. The tape timer, the reels, and the inside of the head cover are also illuminated.

Details such as locking toggle switches assure fool-proof operation. These switches are electri-

cally interlocked. If an incorrect control is entered, a warning light flashes. **Secondary controls** are immediately accessible on the card fronts.

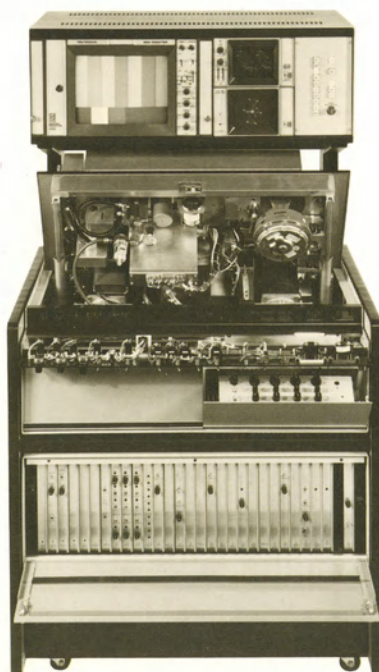
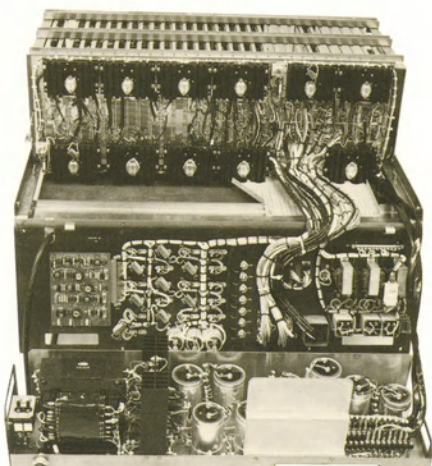
Motion sensing and **dynamic braking** mean smooth transition from any transport control function to any other without going through the "stop" control. **High-speed shuttling** saves valuable production time.

When the AVR-2 is used for production work, a **record safety switch** on the (optional) Editec serves as a fool-proof reminder by inhibiting the record function so that it will operate in the edit mode only.

Maintenance: modularity makes it easier

When the time comes for maintenance, the AVR-2 affords wide-open accessibility. Everything swings out or up. The **control panel opens**, the top plate lifts, and the underside of both areas are also illuminated. In the electronics module, all cards are "plug-in." The hinged rear connector panel swings down, allow-

ing the power supply to be lifted out and set down behind the unit, exposing all inter-connect electronics.



Summing up: everything you need is here

Modular — Set it up in any desirable configuration.

High Performance — The excellence that only quad can give.

Low Cost — Breaks the barrier of the budget.

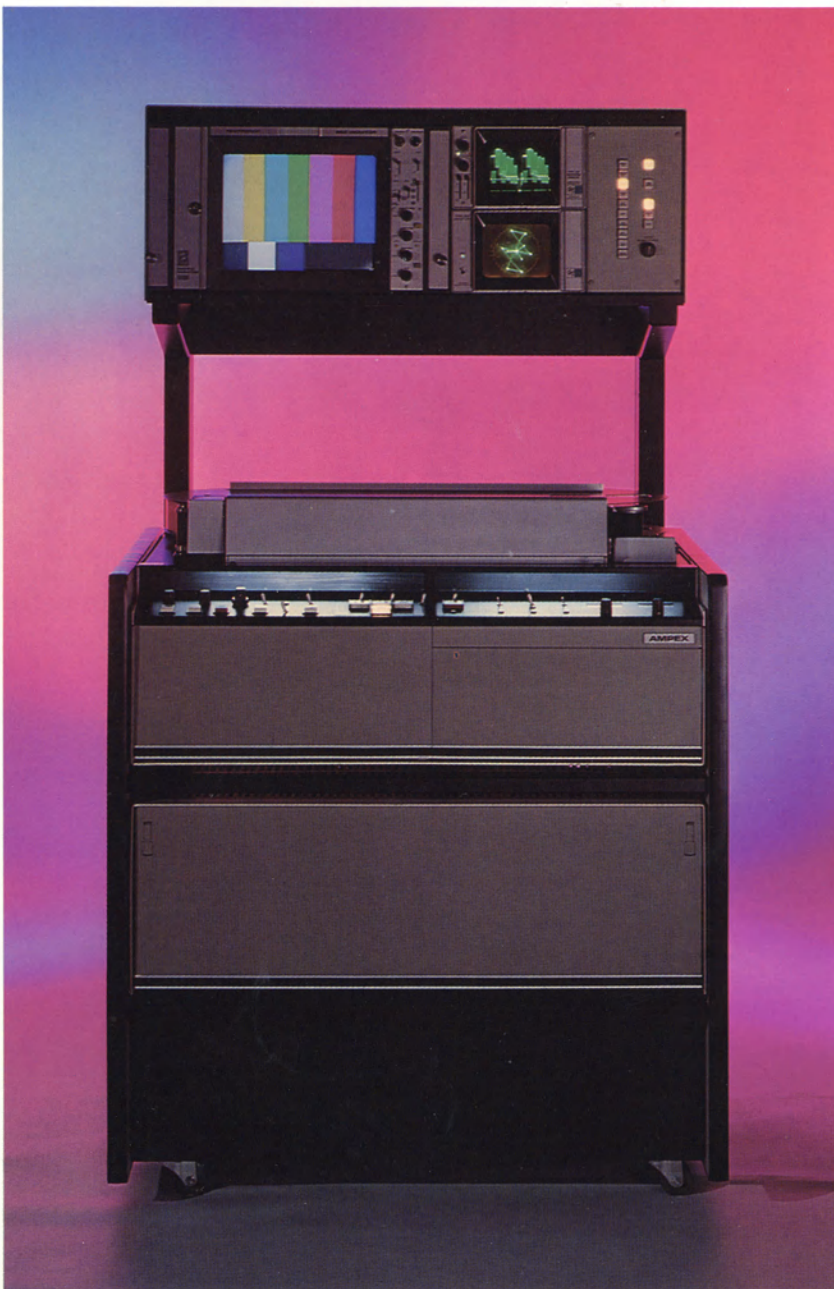
Portable — Take it anywhere.

Low Power Consumption — Plugs into standard wall outlet.

One-second Lockup — Only the AVR-1 does better.

Fully Synchronized — Requires a single reference input only.

Accessories — Everything needed for special capabilities.



Accessories: add them as you need them for super performance

A complete line of recording, playback and editing accessories is available to increase the capabilities of the basic AVR-2. You can adapt your configuration for changing needs simply by plugging them in.

Monitor Bridge. The AVR-2 monitor bridge provides space for a *Tektronix color monitor* or a *monochrome monitor*; a *waveform monitor*, *vector display*, a *monitor control selector panel*, and an *audio speaker*. The bridge may be adjusted to any of four positions for comfortable working and viewing — and to fit in any space.

Automatic Tracking Control. This accessory is essential for automated operations. It eliminates the need for manual tracking adjustment, and simplifies playback operations. It will work with any tape on which a control track is recorded.

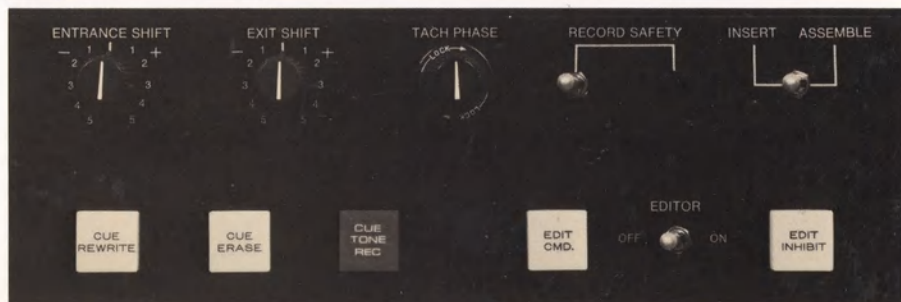
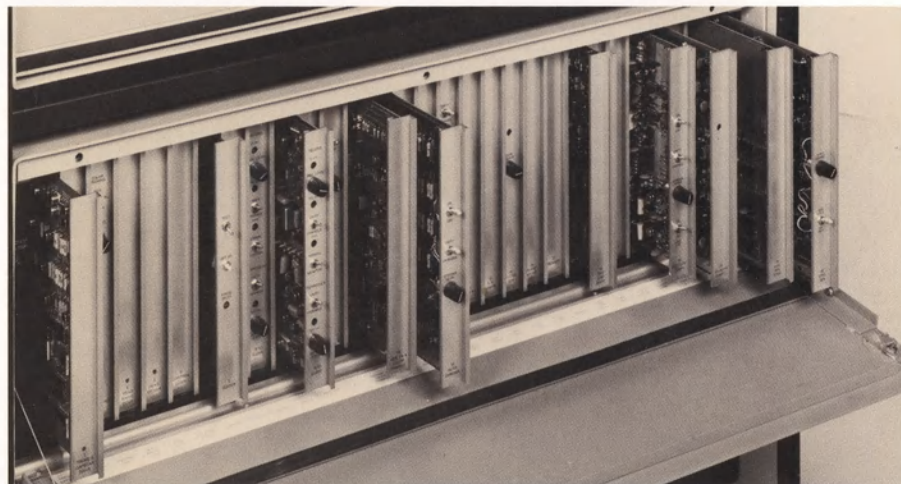
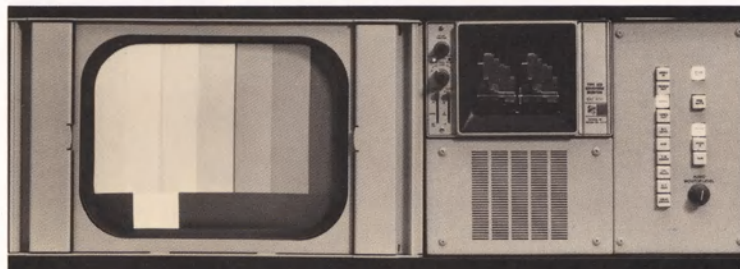
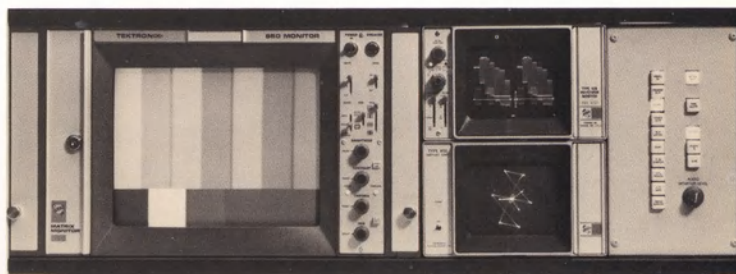
Color Dropout Compensator. Replaces dropouts with correctly matched picture information, both monochrome and color.

Velocity Compensator and Auto-Chroma. A fully automatic Ampex velocity compensator is combined with an Auto-Chroma system in a single accessory. The **velocity compensator** permits greater interchangeability of color tapes, and is essential for the multiple generation duplication of color tapes. The **Auto-Chroma** system provides quicker, tighter chroma control, significant reduction in chroma-noise effects, and reduced head banding in playback. It is a necessity for automated operations.

Edittec*. The Edittec accessory permits faultless editing by providing normal editor functions such as single-frame insert capability, the use of cue tones, and a rehearse mode to improve accuracy. The Edittec also provides for movement and verification of cue tone placement prior to editing. All functions are controlled from a single panel. Editing procedures are accurate to the nearest frame. Entrance and exit cues can be shifted as much as one-half second ahead or back. The cues may be erased either singly or all at once, at the operator's option.

Dual Audio Track. The optional second high-quality audio track provides many additional capabilities for audio recording, mixing, and editing — all without sacrificing the cue track.

Other accessories include: Compressor, audio monitor, stabilized sync standard, and maintenance tool kit.



AVR-2 Specifications

VIDEO PERFORMANCE		525/60 NTSC	625/50 PAL/SECAM
Bandwidth:		Flat to 4.5 MHz; -3 dB at 5.0 MHz; Tolerance to ± 0.5 dB	Flat to 5.5 MHz; -3 dB at 6.0 MHz; Tolerance ± 0.5 dB
Signal-to-Noise Ratio: (Rohde & Schwarz unweighted)	15 ips	46 dB peak-to-peak video to rms noise on interchange basis	39.7 cm/s 43 dB min. peak-to-peak video to rms noise on interchange basis
	7.5 ips	43 dB peak-to-peak video to rms noise on interchange basis	19.85 cm/s 40 dB peak-to-peak video to rms noise on interchange basis
Low Frequency Linearity:		2% Blanking to White (max.)	2% Blanking to White (max.)
Differential Gain:		4% max. Blanking to White	4% max. Blanking to White
Differential Phase:		4° max. at 3.58 MHz off tape	4° max. at 3.58 MHz off tape
Chrominance to Luminance Delay:		25 nsec max.	30 nsec max.
Transient Response: Utilizing 2T sine ² Pulse)		Maximum K-factor 1%	Maximum K-factor 1%
Moire:		-40 dB (Color bars 75% amplitude, 3.58 MHz Subcarrier)	-36 dB (without set-up) (Color bars 75% amplitude, 4.43 MHz Subcarrier)

AUDIO PERFORMANCE		STANDARD AUDIO TRACK	DUAL AUDIO (Optional) (as measured on either track)*
Frequency Response: (400 Hz Reference)	15 ips	± 2 dB, 50 to 15,000 Hz	15 ips ± 2 dB, 50 to 15,000 Hz
	7.5 ips	± 2 dB, 50 to 15,000 Hz	7.5 ips ± 2 dB, 50 to 15,000 Hz
Signal-to-Noise Ratio:	15 ips	Down 53 dB from peak operating level	15 or 7.5 ips Down 46 dB from peak operating level (Down 50 dB from peak operating level with Ampex 176 Tape)
	7.5 ips	Down 53 dB from peak operating level	
Distortion: (Measured at 1 kHz)		Operating level less than 1% rms	Operating level less than 1% rms
Flux Density:		110 nWb/Meter of Track Width	110 nWb/Meter of Track Width; or 175 nWb/ Meter on Ampex 176 Tape
Crosstalk		(Not Applicable)	-45 dB @ 1 kHz
Flutter & Wow:	15 ips	0.10% rms, NAB unweighted (.6 to 250 Hz)	39.7 cm/s 0.08% rms, DIN weighted
	7.5 ips	0.15% rms, NAB unweighted (.6 to 250 Hz)	19.85 cm/s 0.1% rms, DIN weighted

CUE TRACK

Frequency Response: (400 Hz Reference)	15 ips	± 2 dB, 60 to 10,000 Hz
	7.5 ips	± 2 dB, 60 to 8,000 Hz A 30 dB notch filter is provided at the control track frequency
Distortion: (Measured at 1 kHz)		Operating level 1% rms max.

All performance measured using Ampex 175 Video Tape or equivalent, except where noted otherwise.

PHYSICAL DIMENSIONS:

	TRANSPORT PKG.	ELECTRONICS PKG.	LOWBOY CONSOLE	MONITOR BRIDGE	COMPLETE SYSTEM W/CONSOLE & MONITORING	
Height	17 in. (432 mm)	12 in. (305 mm)	43 in. (1092 mm)	12 1/4 in. (311 mm)	65 3/4 min. (1657 mm)	71 1/4 max. (1810 mm)
Width	34 in. (864 mm)	34 in. (864 mm)	37 in. (940 mm)	34 in. (864 mm)	37 min. (940 mm)	
Depth	27 in. (686 mm)	27 in. (686 mm)	32 in. (813 mm)	21 in. (533 mm)	32 min. (813 mm)	36 max. (914 mm)
Weight	155 lbs. (70 kg)	190 lbs. (86 kg)	475 lbs. (216 kg)	128 lbs. (58 kg)	638 lbs. (290 kg)	

TEMPERATURE & HUMIDITY

Temperature: 0°C to 45°C
Relative Humidity: 10% to 90%
(non-condensing)

POWER INPUT

Prime Power Frequency: 50 Hz and
60 Hz single
phase
Input Voltages: 105, 110, 115, 120, 127,
210, 220, 230, 240, 254
Input Current: (without Monitor Bridge)
Max. Nominal
115 V 10 amps 7 amps
230 V 5 amps 3.5 amps

AIR INPUT

1 SCFM @ 45 PSI

RECORD TIME — 7200 FT. REEL

7.5 ips 192 min.
19.85 cm/s 184 min.
15.0 ips 96 min.
39.7 cm/s 92 min.

STARTING TIME

From Ready Mode: 1.0 sec. (525/60)
2.0 sec. (625/50)

OPERATION

Tape Speed:
60 Hz 7 1/2 ips or 15 ips
50 Hz 19.85 cm/s or 39.7 cm/s

VIDEO SIGNAL INPUT

(75 ohms impedance)
Composite Video: 0.7 to 1.8 V p-p

REFERENCE INPUT

(75 ohms impedance)
Composite Color Signal: 0.7 to 1.8 V p-p

VIDEO SIGNAL OUTPUT

(75 ohms impedance)
Composite Video Signal: 1.0 V p-p
Non-Composite:
0.7 (625),
0.714 volts (525)

AUDIO INPUT SIGNAL

Impedance:
50K ohms balanced or
unbalanced bridging
input
Amplitude: -24 dBm to +16 dBm
Source: Line

AUDIO OUTPUT SIGNAL

Output Impedance: 10 Ω or 600 Ω
Peak Output Level: +27 dBm
Nominal Output
at 0 VU on level meter: +8 dBm
Playback Equalization:
ANSI: 2000/35 microsec.

CUE INPUT SIGNAL

Impedance,
Line: 50K ohms balanced or
unbalanced bridging input
MIC: 200 Ω , -55 dBm
Amplitude: -24 dBm to +16 dBm
Source: Line, microphone, cue tone
oscillator (built in for
editing use)

CUE OUTPUT SIGNAL

Impedance: 10 Ω to 600 Ω
Peak Output Level: +27 dBm
Nominal Output
at 0 VU on level meter: +8 dBm
Playback Equalization:
ANSI: 2000/35 microsec.

AMPEX

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